(No Model.)

A. S. WASHBURN.

GRIP PAWL FOR MACHINERY.

No. 522,725. Patented July 10, 1894.

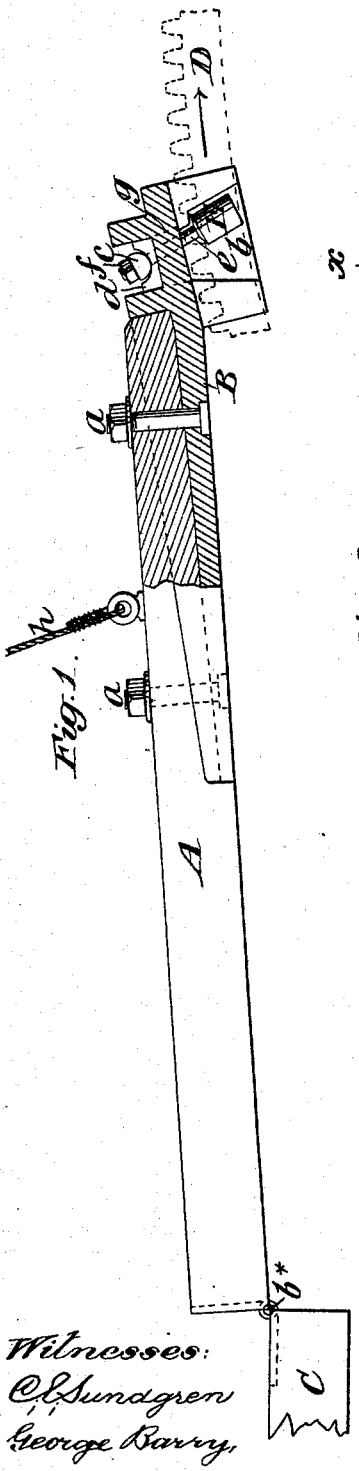

Fig. 1.

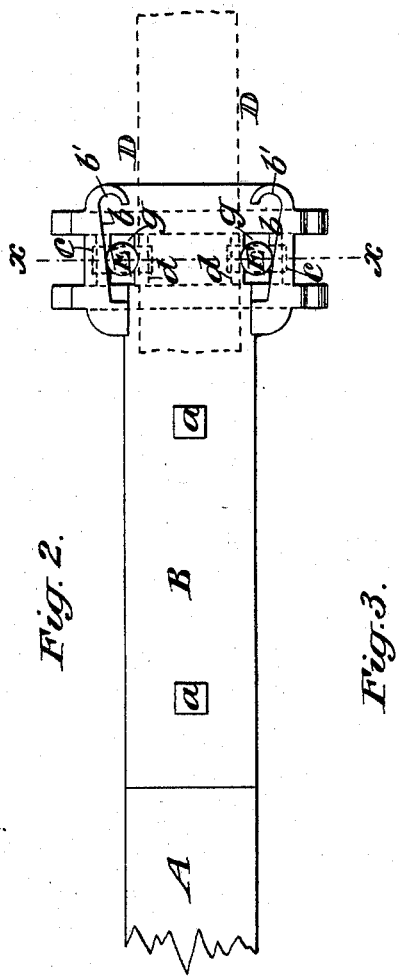

Fig. 2.

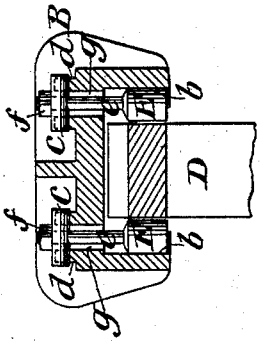

Fig. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

ARCHIBALD S. WASHBURN, OF GERMANTOWN, NEW YORK.

GRIP-PAWL FOR MACHINERY.

SPECIFICATION forming part of Letters Patent No. 522,725, dated July 10, 1894.

Application filed March 10, 1894. Serial No. 503,108. (No model.)

To all whom it may concern:

Be it known that I, ARCHIBALD S. WASHBURN, of Germantown, in the county of Columbia and State of New York, have invented a new and useful Improvement in Grip-Pawls for Machinery, of which the following is a specification, reference being had to the accompanying drawings.

The object of this invention is to prevent a wheel or other moving portion of a machine from turning or running backward while permitting it to turn or run freely in the direction desired.

The improvement is especially applicable to machinery having such rapid motion that a sudden stoppage produced by a pawl acting on the teeth of a wheel or rack would be liable to produce breakage of the teeth. A pawl embodying my invention acts by gripping on opposite sides of the wheel or moving part, and my invention consists in the novel combinations of gripping devices hereinafter described and claimed.

Figure 1 represents a side view partly in section, of a gripping pawl embodying my invention, showing also in dotted outline a portion of the rim of a wheel to which it is applied. Fig. 2 represents an inverted plan of the operative portion of the pawl, showing also in dotted outline portions of the sides of the wheel rim. Fig. 3 represents a transverse section of the pawl taken in the line *x x* of Fig. 2, showing also a portion of the wheel in section.

Similar letters of reference designate corresponding parts in all the figures.

In the example represented, the pawl consists of a wooden bar A and a shoe B of cast iron bolted to it by bolts *a*, but it will be obvious that the bar and the shoe might be of a single piece. The pawl is represented as hinged at *b** to any fixed support C. From the under face of the shoe B near the extremity thereof, there project downwardly two cheeks *b* which are intended to overlap the sides of the rim of the wheel D or other moving object to which the pawl is to be applied, hereinafter referred to as the wheel. Within these cheeks there are suspended from the shoe B, two gripping rollers E for gripping the sides of the wheel.

The inner faces of the cheeks *b* are so inclined or sloped laterally as shown in Fig. 2, and are at such distances apart, that they constitute a space which tapers backward from the extremity of the shoe and which is of such width near the extremity of the shoe as to afford ample room on opposite sides of the wheel for the rollers E to hang loosely therein without interfering with the movement of the wheel but which is so contracted in a backward direction or from the extremity of the shoe that the rollers would jam between the cheeks and the wheel and so prevent the revolution of the wheel. The consequence of this inclination or slope of the cheeks and taper form of the space between them is that the wheel is free to turn in a direction from the narrower toward the wider portion of the said space but is prevented from turning in the opposite direction by the jamming of the rollers.

The rollers E are formed with stems *e* by which they are suspended in saddles *c* from the pawl shoe, the said saddles having rounded bottoms which are received within concave seats *d* in the back of the shoe, the said stems being suspended by nuts *f* behind the saddles in such manner as to be permitted to turn freely in the holes provided for them in the saddles and thereby permit the rotation of the rollers between the wheel and the cheeks *b*. At the bottoms of the seats *d* there are provided in the shoe, slots *g* for the passage of the roller stems *e*, the said slots being of such length, as shown in Fig. 2, as to permit the oscillation of the saddles and the swinging of the rollers toward and from the end of the pawl shoe and of such width, as shown in Fig. 3, as to permit the saddles to slide in their seats *d* laterally to the pawl shoe to such extent as to permit the lateral movement of the rollers necessary for the gripping and freeing of the pawl. The cheeks *b* are provided at their outer ends with stops *b'* to stop the rollers from swinging outward farther than is necessary.

The pawl is intended to be so suspended by a cord or chain *h* that the shoe will always be kept clear of the tops of the teeth of the wheel so that there need not be any friction or drag upon the teeth. As long as the wheel is moving in the proper direction the rollers hang loosely against it but the instant it be-

gins to turn in the opposite direction it carries the rollers into the narrower portion of the space between it and the cheeks where they jam and stop the wheel.

What I claim as my invention is—

The combination with the pawl having on its back seats in the bottoms of which are slots and having on its face projecting cheeks between which there is a taper space, of saddles which are capable of oscillating back and forth and of sliding laterally in said seats, and rollers suspended from said saddles within said taper space by stems which pass through said saddles, substantially as herein set forth.

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